Emergency Room Psychiatric Consultation Data Base

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The University of Hawaii Affiliated Hospitals Residency Program supports The Queen's Medical Center Emergency Room (ER) by providing a resident physician for psychiatric consultation. In an effort to improve patient care, the residents are working with the hospital to computerize the psychiatric consult service to ease the problems of limited space in the ER for psychiatric examinations. Limited psychiatric office space, and time wasted walking back and forth from the nursing station are handicaps. This article will describe the current system and compare it with the system being developed. The ultimate goal is to make consultations more efficient by creating a data base of known patients, and by increasing the speed of evaluating and processing patients, thus reducing the amount of time a patient spends in the ER.

Psychiatric residents are asked to evaluate 9 to 18 patients per 24 hours; these take an average of 60 minutes each, while during the same period the resident has to provide psychiatric emergency consultation support to a 500-bed general hospital, ie, while assessing and treating patients in the ER, a resident regularly must see patients on all medical and surgical wards.

Within the ER there are only 3 psychiatric examining rooms available for patients, and these are easily filled when 3 or 4 patients arrive within 2 to 3 hour, which is a common occurence. The limited space also is made more critical when intoxicated patients occupy one or more of the psychiatry rooms while they await sobriety. Given this problem of examination room availability, reducing the time for the assessment of previous pychiatric histories is a logical solution for reducing the time patients need to spend in the ER.

The official psychiatric resident emergency room consultations are handwritten on a 3-part carbonless form. For at least the past 5 years residents have been filing their copy of the reports as a reference for when patients return; they also are useful for research projects. This has amounted to 2 large filing cabinets taking up 25% of the psychiatry residents' office spaces. Often, the staff who previously filed the reports are no longer available to search the file. The location of the ER psychiatric residents' office is about 30 feet from the nursing station, which needs to be traversed many times during the evaluation of a single patient, to: (1) Pick up the ER clipboard, (2) pick up old charts, (3) order labs or mediations, (4) pick up lab results and to, (5) drop off admission or discharge orders. Unfortunately, time is wasted walking back and forth between the office and the nurses' station.

A computerized system addresses most of the problems with forms, filing, environment, and logistics by instantly optimizing access to pertinent data bases involved in patient care.

To identify our needs a committee of interested residents met periodically and developed specifications on the data that needed to be collected for the evaluation of a patient. A primary concern was that it be very user-friendly since all residents are not computer-literate or cannot type as fast as they can write. To make the computer worth the effort for residents, there needs to be a perceptible improvement in order to make learning a new system justifiable. As such, an icon-based (windows type) environment with a mouse is likely to be the most user-friendly. The Apple/Macintosh format was a popular alternative that was requested by some residents; however, The Queen's Medical Center standard is IBM which led the committee to agree unanimously on the window's format.

The next step was to choose the right computer; we knew we wanted at least a 486 CPU, and the faster the better. It would not go over well with our users if, to save time, they would be forced to use a computer, and then find they had to wait for the computer. Fortunately, once again we found QMC's existing system to be compatible with what we wanted.

As for hard-disk capacity, we didn't know how much would be required. The questionable short-cut taken was to ask a medical software package manufacturer how much hard disk space their package required to handle 5 years of patients' records at an average of 10 a day—questionable in that the amount of data saved by our curent system may have been completely irrelevant. This was unintentional, as at first we examined 3 medical software packages (two IBM-based and one Mac-based) for the possibility of using one of them on our computer. Those packages were rejected by the new evaluator because they included too many unnecessary office procedures: Electronic billing, prescription writing, appointment scheduling. They were not task specific so as to make them easy to use by 35 residents and attendings. The software packages would not be flexible enough to incorporate Diagnostic Laboratory Service reports and QMC's Order Entry.

Additional clinical software that might be added in the future included a drug interaction warning system and an aid in diagnosing and treating psychiatric disorders.

Features that make the system easy to use are very important. With the use of icons and a mouse, the user should be able to move from one application to another rapidly and easily. Defaults and short-cuts so the user is directed to frequently used areas with a minimum of mouse/keyboard effort were priorities. The system should allow interruption of one activity, such as writing a report, to search the data base, then return to where the report left off. Working in an emergency room is often chaotic; therefore, the programs should save the files when the user has to leave the computer unattended, and then return to the users' place before he or she had to leave. Also for the purpose of medical record security, the computer should be able to request a password after being unattended for a specified length of time.

We have pointed out how a computer can help in several problem areas. The bulky file cabinets can be replaced by a hard-disk drive with tape or floppy disk backup which would eliminate the problem of hiring a file clerk. By using a laser printer, reports would always be legible. Laboratory reports would be available in the residents' office by direct transmission from the main hospital computer.

Difficult patients who are frequent visitors to the ER would have their patient care plans that are developed during morning reports instantly available for faster disposition, thus reducing the time spent in the ER. This would also help to reduce the problem

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Robert Flowers MD, is well-known to Hawaii physicians and residents. Having lived in Hawaii for more than 25 years, Flowers is an acknowledged world authority on periorbital aesthetic surgery and facial implants. Poetry by Flowers has appeared in many issues of the *Journal*, and we look forward to more. His associate, **Gregory Caputy MD** served his general surgery residency at Mayo Clinic and his plastic surgery in Halifax, Nova Scotia. Caputy and Flowers present a very honest review of computer imaging. This is an interesting paper that complements the "Virtual Reality" paper by Camara.

This issue wouldn't be complete without an article about library searches by computer, the most common use of computers in medicine today. Hawaii Medical Library has written a comprehensive "how-to" for physicians.

We'd like to extend an invitation to physicians to attend a Computer Exposition here in Hawaii at the Blaisdell Exhibition hall on January 26 and January 27, 1994. This is a must for both the abacus-using physician and physicians who now are using computers.

See you there and
Happy Computing!
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Special Issue Editor

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Idaho. 1993.
13. McGee, Michael. The Physician-Computer Conference. Coeur d'Alene. 1993.
14. Bates DW, Leap LL, Petrycki S. Incidence and preventability of adverse drug events in hospitalized adults. *J Gen Intern Med.* 1993;8:289-94.
15. Tiwanak G, Davis D, Rauscher L. Unpublished data. 1992.
16. Davis D. Unpublished data. 1992.
17. Massaro TA. Introducing Physician Order Entry at a Major Academic Medical Center: I. Impact on Organizational Culture and Behavior. *Academic Medicine.* 1993;68:20-25.
18. Bria WF, Rydell R. *The Physician-Computer Connection.* American Hospital Publishing, Inc. 1993.
19. Gardner R. personal communication. LDS Hospital, Salt Lake City, Utah. 1993.
20. Glaser J. personal communication. Brigham and Women's Hospital. Boston, Mass. 1993.
21. Wormuth DW. SCUT: clinical data orgainzation for physicians using pen computers. PROC Annu Symp Comput Appl Med Care 1992:845-6.
22. Lussier YA, Maksud M, Desruisseaux, Yale PP, St-Arneault R. PureMD: a computerized patient record software for direct data entry by physicians using a keyboard-free pen-based portable computer. Proc Annu Symp Comput Appl Med Care. 1992:261-4.
23. Bria WF. personal communication. 1993.
24. Hospitals put wireless terminals to the test. *Modern Healthcare.* April 5, 1993;38.
25. Eisenstadt S, personal communication. El Camino Hospital, San Jose, California, 1993.
26. Glaser J. The Physician-Computer Connection Conference. Coeur d'Alene, Idaho. 1993.

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of limited space.

A fax/modem communications capability would speed up sending reports to mental health clinics after a patient gives written consent. In the future it also might allow access to other patient data bases. When the QMC order entry system is online in 1995, ER and admission orders will be entered conjointly.

Currently we have identified our needs and the specifications or our desired data base. An IBM model 56 computer with a 486 CPU, 8 megabytes of RAM and two 212-megabyte hard drives have been purchased. The psychiatry office has been wired to connect the QMC network. A new pushbutton combination lock has been placed on the door to prevent theft of the computer.

A problem we are still working on, however, involves standardization with other patient data bases within the Medical School. By the time this article is published the data base problems will be worked out, the software will be installed, and the users will be trained. When the system is installed, using the computer will probably be slower than the old system. As the users become familiar with the new system, processing evaluations will become faster, more efficient, and will produce better outcomes.